Draft Environmental Impact Statement

for the

Pinedale Anticline Natural Gas Field Exploration and Development Project

Sublette County, Wyoming

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(Lead Agency)

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In Cooperation With:
(Cooperating Agencies)

U.S. Army Corps of Engineers
U.S. Forest Service
State of Wyoming

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This Environmental Impact Statement was prepared by PIC Technologies, Inc., an environmental consulting firm, with the guidance, participation, and independent evaluation of the Bureau of Land Management and cooperating agencies. The Bureau of Land Management and the cooperating agencie in accordance with 40 CFR 1506.5(a) and (b), are in agreement with the findings of the analysis and approve and take responsibility for the scope and content of this document.

Executive Summary

This EIS was prepared to disclose impacts to the human and natural environment from an oil and gas exploration and development proposal in Sublette County, Wyoming. A number of oil and gas companies have proposed to develop natural gas from an area roughly between the Jonah II Field and the Town of Pinedale (30 to 35 miles). For purposes of the EIS, this area is identified as the Pinedale Anticline Project Area (PAPA). This nearly 200,000 acre area consists primarily of Federal lands (nearly 80 percent) and minerals (83 percent). However, the project area also includes state and private lands and minerals, particularly along the New Fork and Green rivers and in the vicinity of Pinedale. A number of unique natural resources are located on these Federal, private and state lands.

The Draft EIS is not a decision document. Rather, it is to inform decision makers of the potential consequences of alternative choices available to them and demonstrate how their decisions could impact the human and natural environment. Ultimately, decisions about development on Federal lands and minerals will be made in a record of decision to be issued following consideration of public comments on the Draft and Final EIS. These decisions must accommodate the rights conveyed to the operators in Federal mineral leases and the need to protect important natural resources. The EIS documents that it will not be possible to achieve both of these goals in all areas within the PAPA if development is extensive. In some areas, development will lead to significant adverse impacts to the environment. No technically or economically feasible level of mitigation can be applied in these areas to minimize the severity of impacts to less than significant. The only way to eliminate these impacts would be to take the lease rights granted to the lessee, which BLM cannot do.

All but 7.4 square miles of the Federal minerals in the project area has been leased. Some of these leases were issued in the 1950s and few of the leases in the project area contain a no surface occupancy stipulation. Through these leases, the BLM has conveyed a right to the lessee that allows development of minerals. By issuing the leases, the BLM no longer has the authority to preclude surface disturbing activities even if the impact of such activity is significant, unless prohibited by law. BLM can only impose reasonable mitigation measures upon a lessee.

The project area contains some very unique natural resources. The New Fork and Green rivers generally run from north to south on the east and west sides of the project area. The historic Lander Trail runs east to west through the middle of the project area. Sagebrush and high desert vegetation blending with riparian areas and extensive wetlands associated with the flood plains of the New Fork and Green rivers dominate the landscape. Along the rivers, ranching activities and hay production are evident as are scattered residences. Grazing permittees in the PAPA have a long history of respect and stewardship for the land and feelings about traditional land uses are strong. Scenery in the area is outstanding with the Wind River Range to the east and the Wyoming Range to the west.

Significant wintering populations of big game, including deer, antelope and moose, use portions of the PAPA and much of the northern half of the project area is considered crucial winter range for these species. Raptor nests are abundant along the rivers and sage grouse are abundant above the river flood plains.

Until recently, there has been little interest in developing natural gas resources in the PAPA. The first well was drilled 1939. Between 1939 and early 1997, only 23 wells were drilled in the area. However, the sporadic interest in developing the PAPA changed recently with the discovery of new production techniques in the Jonah II Field. Since early 1987, 18 wells have been drilled in the area.

A great deal remains to be learned about the potential for natural gas development in the project area. The operators have stated, and the BLM concurs, that not enough exploration has been completed to date to fully understand the development potential of the PAPA. Some of the operators believe that 300 or 350 wells may be drilled in the project area over the next 10 to 15 years. Others believe that several thousand wells may be necessary to fully develop all the natural gas resources. Although most agree that the potential for economic recovery is relatively high on the Anticline Crest (a relatively narrow band that runs north to south through the PAPA), development off the crest

may be limited to a few, isolated spots where economic accumulations of natural gas exist.

Obviously, the extent of environmental impact from exploration and development will depend, to a large extent, on the ultimate level of development in the project area. A few hundred wells restricted to the anticline crest may not result in significant adverse impacts to most natural resources in the project area, if adequate mitigation is applied. Conversely, if large scale development occurs on and off the anticline crest, a number of natural resources would be significantly affected.

Even with a low to moderate level of development, the landscape in the portion of the PAPA where development occurs is going to change. Where these landscape changes might occur will remain unknown until further exploration is completed. On a local level, landscape changes are going to be dramatic. Most of the project area is pristine and has not been adversely affected by man. In areas where development of the gas resources is extensive (i.e., a high well density), the natural characteristics of the landscape will change to an "industrialized-appearing" setting. This will be particularly true where well pad densities are higher than 8 per square mile. At 4 well pads per square mile, although still evident, the level of development is not expected to overwhelmingly dominate the natural landscape. Sights, sounds and human presence will affect the solitude that is currently present through much of the project area. These changes will be most evident to those who recreate or live adjacent to the PAPA.

The economy of Sublette County is very dependent on revenues from oil and gas. Although some believe this is a recent result of development of the Jonah II Field, in fact, oil and gas has played a significant role in Sublette County's economy since the 1920s. In 1998, minerals accounted for 75 percent of the county's total assessed valuation - agriculture represented less than 3 percent and residential properties about 9 percent. Many of the benefits that people enjoy by living in Sublette County are a direct result of contributions to the local economy by the oil and gas industry. Without these revenues, the economic prosperity that Sublette County now enjoys would quickly disappear and other sources of revenue would need to be found. Fortunately for county residents, revenues from oil and gas production should continue through the foreseeable future.

Historically, most of the oil and gas development has been in the southern portion of Sublette County, away from Pinedale. Towns like Big Piney and LaBarge are populated mostly by people who work in the oil and gas industry. Residents in the northern portion of the county have had relatively little experience with this type of development although they have certainly benefitted from taxes paid by development in the southern portion of the county.

It is unlikely that adverse socioeconomic impacts would occur from development. However, very positive impacts would result from the significant revenues which could be generated by development in the project area. Generally, the higher the level of development the more significant the revenues returned to the county will be. Annual property tax paid on production from just 50 wells in the PAPA would generate approximately $1 million to Sublette County and over $2 million to the Wyoming School Foundation. Sales tax collected from drilling of single well is estimated to be about $67,000, of which nearly $20,000 would remain in Sublette County.

Extensive development would result in significant economic activity. Total economic activity generated from natural gas production is significant when compared to other activities in southwest Wyoming. For instance, non-resident antelope and deer hunters in all of southwest Wyoming generate about $9 million in total economic activity annually. This is equal to the same total economic activity that would be generated by less than eight typical wells operating year-round in the PAPA.

Significant adverse impacts to transportation systems in the project area are not expected although much work remains to develop an acceptable transportation plan for the project area. Nuisance impacts, such as dust and washboarding of area roads, would increase with the intensity of development. Speeding is already a problem in the PAPA and safety concerns associated with excessive speeds will need to be addressed. Constant vigilance by the operators will be required to assure that roads are adequately maintained and the interests of the traveling public are protected.

If development is extensive in the vicinity of residential areas near Pinedale and along the New Fork River, it is anticipated that significant impacts will occur to residential land uses in these areas. A number of subdivisions and residential developments occur near the anticline crest. All of these are

located on private lands. Where the minerals under these areas are Federally-owned, BLM would avoid placement of wells within 0.25 miles of occupied structures. However, where the minerals are privately or state-owned, no such restrictions would be applied and wells could be drilled as close as 350 feet from occupied dwellings. Noise and odor impacts could occur to adjacent residences. To avoid significant impacts from noise, wells would need to be located at least 800 feet from residences.

According to air quality modeling completed for the EIS and preliminary information regarding emissions from wells, the incremental cancer risk from exposure to benzene at 350 feet is considered significant for the most likely exposure scenario. A significant risk is defined as 1 additional person in one million developing cancer as a result of exposure. At 350 feet, the risk was calculated to be 1.4 additional people/one million. At 0.25 miles, the significant risk disappears.

Federal lands directly adjacent to Pinedale are used by local residents for dispersed recreation primarily because these areas are convenient. If development is extensive adjacent to town, impacts to local recreation use could be significant and it is likely that users would choose to avoid these. Heavy truck and vehicle traffic is already degrading the enjoyment of some of these areas.

Many comments were received during scoping regarding the potential adverse impacts to the visual character of the project area, particularly areas visible from Pinedale including the Mesa. A sensitive viewshed area was identified in the Draft EIS based on public comment and terrain modeling. This sensitive viewshed includes all the VRM Class II areas identified in the Pinedale RMP and additional areas which are currently designated as VRM Class III and IV. Much of this sensitive viewshed lies on Federal lands. If development is extensive in this viewshed, landscape alterations would be visible from key viewpoints and would be very noticeable, even to the casual observer. Of particular concern are roads and pipelines - the linear nature of these activities make them particularly evident. On Federal lands, BLM can reduce these impacts somewhat. Terrain will allow some facilities to be hidden from view. However, if development is extensive it will be impossible to prevent significant visual quality degradation. A large portion of the sensitive viewshed is located on private and state lands where visual quality management objectives do not exist. On these lands, development would be obvious because it typically would be in the foreground and the impact could result in a significant noticeable change to the landscape.

Extensive air quality modeling was conducted to determine potential impacts from the project. In recent years, potential impacts from emissions associated with oil and gas development have been an issue in southwestern Wyoming. The results of modeling show that no excedance of National Ambient Air Quality Standards would occur. In addition, no significant impacts to wilderness and Class I airshed Air Quality Related Values would occur from project development and production, even at the maximum levels analyzed in this EIS.

The overall integrity and setting of the Lander Trial would be significantly altered if development in the vicinity of the trail is extensive. Portions of the trial in the project area cross private and state-owned lands. On these lands, the trail is not protected and wells could be placed directly on the trail. On some of these areas, the trail has already been adversely affected by oil and gas development. On Federal lands, the trail would be protected using, at a minimum, standard stipulations that prohibit direct impacts to the trail and protect its setting.

Extensive development will create challenges for protecting water quality in the New Fork and Green rivers. Sedimentation in the New Fork River may already be a problem. In addition, the Green River in the project area is a Class I water. The EIS contains a number of recommendations to control nonpoint pollutants in these and other project area waters. If careful application of best management practices are not strictly enforced on all lands, water quality deterioration could occur.

An extensive network of wetlands occurs along the New Fork River - nearly all of which are located on non-Federal lands. It is anticipated that extensive development in the flood plains along the New Fork River could result in short-term loss of wetland functions.

Even a moderate level of development is expected to result in significant impacts to wildlife in the PAPA. The EIS suggests that the quality of crucial winter range would be degraded and that the functional value of the habitat would diminish even at a well density of 4 well pads/square mile. The

denser the well pad spacing, the more severe this impact would be.

BLM restricts development during crucial periods on Federal lands to protect wintering wildlife. However, where these habitats overlap private and state lands, no restrictions would be imposed and wintering animals may be displaced by project-related activities. Displacing big game from crucial winter habitats could result in concentrating the animals on less suitable habitat or on other winter ranges. Displacing big game to other winter ranges could cause these ranges to be over utilized, lowering their carrying capacity during extreme winter conditions.

Development on crucial winter ranges would result in a net loss of this habitat for big game. Such a loss would contradict Wyoming Game and Fish Commission policy that recommends no net loss of this type of habitat.

Sage grouse nesting habitat quality would also diminish proportionate to the density of wells in the project area. Impacts to sage grouse are of particular concern because the project area contains one of the largest populations of sage grouse left in this part of Wyoming. BLM can impose seasonal and breeding period protective restrictions on development in the vicinity of sage grouse leks and nesting habitat on Federal lands. However, no restrictions would be applied on private or state lands. Development on these lands could result in abandonment of leks and a reduction in the overall project area sage grouse population.

BLM imposes protective buffers and seasonal restrictions around raptor nests. No such restrictions would be applied on private or state lands where most of the raptor nests in the project area occur. If development is extensive in the vicinity of nests on private or state lands, some nest abandonment would be expected.

Four threatened/endangered (T/E) wildlife species were identified by the U.S. Fish and Wildlife Service as potentially occurring in the PAPA - black-footed ferret, bald eagle, moun-tain plover, and Canada lynx. The analysis has concluded "no affect" to these species. However, water depletions associated with project implemen-tation "may affect" Colorado River endangered fish. No T/E plant species would be affected.

The EIS contains in excess of 100 recommended mitigation opportunities that, if implemented, would reduce the impacts to natural resources. However, there is no combination of mitigation measures that would eliminate many of the significant impacts described above. If development is extensive, significant impacts would occur.

The potential for cumulative impacts ("the incremental impact of the action when added to other past, present and reasonably foreseeable future actions...") to occur from this project was also analyzed. Cumulative impact analysis areas (CIAAs) were identified for each resource, with the help and involvement of the public, Federal, state and local agencies, industry and the environmental community. Potentially significant cumulative impacts were identified for water resources, wildlife and wildlife habitat (i.e., big game and sage grouse), and wilderness area visibility. The air quality visibility analysis showed that there would be a maximum of 9 days in which the 0.5 deciview change threshold would be exceeded from cumulative sources. However, following Ultra Petroleum's emissions reduction mitigation efforts at the Naughton Power Plant, and in consideration of the timing, magnitude and duration of the remaining cumulative visibility impacts, the Forest Service considered this impact to be within an acceptable range. Modeling indicates that the air quality in the sensitive Class I and Class II areas will show a net improvement with the Naughton decreases.

Scoping for the Pinedale Anticline project identified several outdated management prescriptions in the Pinedale Resource Management Plan (RMP) for unleased Federal mineral estate. One area in particular concerns the rural subdivisions which are increasing in parts of Sublette County. Federal mineral estate exists under many of these areas. Insufficient environmental impact consideration is given in the RMP to leasing or not leasing these minerals, or for stipulations for parcels that are identified as available for lease. Also, unleased Federal minerals along the Wind River Front and Gros Ventre foothills, where high recreation use, subdivisions, crucial wildlife habitat, high visual sensitivity, and other values, need reevaluation before a determination can be made as to their suitability for lease. In response to this concern, the BLM Wyoming State Director has concurred in the withholding from oil and gas leasing of these Federal

minerals until the effects of leasing these lands can be addressed in a revision to the 1988 BLM Pinedale RMP and the Bridger-Teton Leasing EIS.

This EIS contains a framework for an Adaptive Environmental Management Plan that would be adopted for this project. This plan would involve the participation of all affected interests (public land users, Federal, state and local agencies, industry, and others). The plan would be designed to verity implementation of mitigation measures adopted in the ROD; measure the success of those mitigation measures; make appropriate modifications to mitigation based on actual performance; allow for peer review of mitigation and monitoring results; and provide feedback to the interested public.